

Remarks

Amendments to the Claims

Claims 1-52 were pending in this application, and subject to a Restriction Requirement. Claims 31-36 have been canceled. Applicants expressly reserve the right to pursue protection of any or all of the canceled subject matter in one or more continuing applications. No claims have been amended.

New claims 53-57 have been added. Support for new claims 53-57 can be found throughout the specification, for example at page 2, line 7 to page 8, line 18 and at page 11, lines 12-14. The claims as pending accordingly relate to the single inventive concept of using a fibroblast feeder layer attached to a polymer of an acid monomer to support the growth of another mammalian cell type.

No new matter is introduced by these amendments. To the extent that any of the claims are viewed to be narrowed by the amendments made herein, Applicants reserve the right to pursue protection of the broader scope of the subject matter in this or a later-filed application.

After entry of this amendment, **Claims 1-30 and 37-57** are pending in the application. Consideration of the pending claims is requested.

Restriction Requirement

In response to the restriction requirement, Applicants provisionally elect, with traverse, the claims of Group I, directed to a method for culturing cells (claims 1-26).

The Office action alleges that the pending claims describe four different inventions or groups of inventions (I through IV) which are not so linked as to form a single general inventive concept under PCT Rule 13.1 because they lack the same or corresponding special technical feature. However, Applicants submit that the pending claims satisfy the requirement of Rule 13^{bis}, and should be examined together.

The Office action alleges that the claimed methods for culturing cells do not have a special technical feature in view of the methods, culture supports made from acid monomers and

fibroblasts disclosed in U.S. Patent No. 6,565,960 (hereinafter the “960 patent). Applicants respectfully disagree with this assertion.

The ‘960 patent teaches a method of strengthening a polymeric material (e.g., collagen), by providing a mixture comprising the polymeric material and a monomer having a first catechol group; oxidizing the mixture; and polymerizing the monomer via the first catechol group to form a polymer in which the first catechol group has been oxidized to a quinone group, and the polymer intercalates into the polymeric material. The ‘960 patent discloses a composition having one or more fibers surrounded by additional collagen material (e.g., collagen foam) and cells, such as fibroblasts, infiltrated therein. The ‘960 patent discloses that the composition can be used as a skeleton or support for colonization of cells.

The fibroblasts disclosed in the ‘960 patent do not function as feeder cells in accordance with the teaching of the present application. The fibroblasts used in the present claimed methods and vessels are used to provide all the necessary growth factors and extracellular matrix proteins sufficient to support the serum free growth of mammalian cells, e.g. keratinocytes (see for example page 32, lines 19 to 21 of the specification).

There is no teaching or suggestion in the ‘960 patent that the fibroblasts of the described composition are used to support growth of mammalian cells as a feeder layer in a serum free medium. The ‘960 patent discloses the culture of fibroblasts alone, as a finished engineered tissue. The use of fibroblasts as a feeder layer, such as in co-culture with another cell type, is not disclosed. In addition, the ‘960 patent does not teach or suggest attaching fibroblasts to a cell culture surface comprising a polymer of an acid monomer, as required by the independent claims. Thus, the claims of the present application include a special technical feature, and should be examined together.

The Office action further requires an election of a species for initial prosecution, namely a single cell type as recited in claims 4, 29 and 37. In response, the Applicant elects with traverse epidermal keratinocytes.

Applicants respectfully request that the Examiner consider revising the requirement for an election of species, and allowing the Applicants to elect the species of “keratinocytes.” Support for the election of “keratinocytes” can be found at page 5, lines 28 to 30. Dorland’s on-line medical dictionary defines “keratinocyte” as “the epidermal cell which synthesizes keratin; constituting 95 per cent of the epidermal cells and, with the melanocyte, forming the binary cell

system of the epidermis." Thus, epidermal keratinocytes, intestinal mucosa keratinocytes, and oral mucosa keratinocytes are all the same cell type, but are derived from the epidermis, intestinal mucosa, and oral mucosa, respectively. In the unlikely event that the Examiner maintains the requirement for an election of species in its present form, the Applicants elect epidermal keratinocytes.

Conclusion

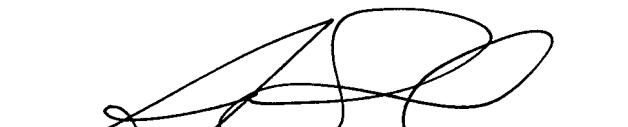
It is respectfully submitted that the claims should all be recombined and considered in the current case, and that they are in a condition for substantive examination. If an additional restriction requirement is asserted, or if the present restriction requirement is maintained, the Examiner is formally requested to contact the undersigned prior to issuance of the next Office action, in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. This request is being submitted under MPEP §713.01, which indicates that an interview may be arranged in advance by a written request.

Respectfully submitted,

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